

**IN THE UNITED STATES PATENT AND TRADEMARK OFFICE**

In re National Phase of:

Applicant: Emilio Palomares Gil et al.  
PCT Application No.: PCT/GB2003/003397  
PCT Filing Date: August 4, 2003  
U.S. Serial No: 10/523,036  
Title: LOW-TEMPERATURE METAL OXIDE COATING  
Attorney Docket No. FRYHP0130US

**INFORMATION DISCLOSURE STATEMENT**

Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

1. Pursuant to 37 C.F.R. 1.97 and 1.98, and in compliance with 37 C.F.R. 1.56, the Office's attention is directed to the patents, pending applications, publications and other information listed on the attached PTO-1449.

Regarding any document, publication or other information for which a date is not given on the attached PTO-1449, Applicant(s) believe(s) the same may qualify as "prior" art to this application and should be treated accordingly, although Applicant(s) reserve(s) the right to contest the prior art status of any document, publication or information, should issue arise.

2. Regarding each listed document that is not in the English language, an English-language translation accompanies this Statement as indicated on the attached PTO-1449 or a concise explanation of the relevance of the document is set forth in the following document(s):

- (a) ☒ Copy of each English language version of a search report indicating the degree of relevance found by the foreign office of each document being submitted from the search report, is being submitted herewith or has previously been submitted.
- (b) ☐ Attached is a "Concise Explanation of Relevance of Non-English Language Documents".

3. Pursuant to 37 C.F.R. 1.97(b) this Statement is being filed (one must be checked):

- (a) ☐ Within 3 months of the filing date, date of entry into the National Stage, or filing date of CPA.
- (b) ☒ Before the mailing date of a first Office Action on the merits. If this Statement is not filed before the mailing date of a first Office Action on the merits, the required certification is given below or, in the absence thereof, the Office is authorized to charge the required fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 18-0988 for consideration of this Statement.
- (c) ☐ Before the mailing date of a first Office Action on the merits after a first or second submission after final rejection under 37 C.F.R. 1.129(a).

(d) \_\_\_ After the period set forth in 37 C.F.R. 1.97(b) but before the mailing date of either a final action or a notice of allowance.

(1) \_\_\_ The required certification is given below, or

(2) \_\_\_ Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(p) for consideration of this Statement, or

(3) \_\_\_ Charge the fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 18-0988

(e) \_\_\_ After the mailing date of either a final action or a notice of allowance, but before payment of the issue fee. Petition hereby is made for consideration of this Statement and the required certification is indicated below.

(1) \_\_\_ Enclosed is a check covering the fee set forth in 37 C.F.R. 1.17(p), or

(2) \_\_\_ Charge the fee set forth in 37 C.F.R. 1.17(p) to Deposit Account No. 18-0988.

4. Certification (if applicable)

(a) \_\_\_ The undersigned hereby certifies that each item of information contained in this Statement was first cited in any communication from a foreign patent office in a counterpart foreign application not more than 3 months prior to the filing of this Statement.

(b) \_\_\_ The undersigned hereby certifies that no item of information contained in this Statement was cited in a communication from a foreign patent office in a counterpart foreign application or, to the undersigned's knowledge after making reasonable inquiry, was known to any individual designated in 37 C.F.R. 1.56(c) more than 3 months prior to the filing of this Statement.

5. The Commissioner is hereby authorized to charge any additional fees or credit any overpayment to Deposit Account No. 18-0988.

Respectfully Submitted,

RENNER, OTTO, BOISSELLE & SKLAR, LLP

By 

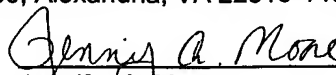
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**CERTIFICATE OF MAILING UNDER 37 C.F.R. §1.8**

I hereby certify that this correspondence (along with any paper referenced as being attached or enclosed) is being deposited on the below date with the United States Postal Service with sufficient postage as first class mail in an envelope addressed to Commissioner for Patents, P.O. Box 1450, Alexandria, VA 22313-1450.

Date: 1-3-06

  
Jennifer A. Moore

Form PTO-1449 (Modified)  <b>LIST OF PATENTS AND PUBLICATIONS FOR APPLICANT'S INFORMATION DISCLOSURE STATEMENT</b>  (Use several sheets if necessary)	Atty Docket No. <b>FRYHP0130US</b>	Serial No. <b>10/523,036</b>
	Applicant: <b>Emilio Palomares Gil et al.</b>	
	Filing Date <b>2/2/05</b>	Group

## U.S. PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Name	Class	Sub-class	Filing Date if Appropriate
	4,579,594	04/1986	Nanao et al.			
	4,842,888	06/1989	Haluska et al.			
	5,612,082	03/1997	Azuma et al.			
	5,637,346	06/1997	Moriyama et al.			
	5,811,153	09/1998	Hashimoto et al.			
	5,814,137	09/1998	Blohowiak et al.			

## FOREIGN PATENT DOCUMENTS

Examiner Initial	Document Number	Date	Country	Class	Sub-class	Translation	
						Yes	No
	0 374 754	06/1990	EP				
	0 513 821	11/1992	EP				
	0 564 866	10/1993	EP				
	0 650 187	04/1995	EP				
	0 674 019	06/1995	EP				
	0 939 434	09/1999	EP				
	95/16060	06/1995	WO				
	98/28466	07/1998	WO				
	99/05712	04/1999	WO				

## OTHER ART

Examiner Initial	Author, Title, Date, Pertinent Pages, etc.
	Palomares, Emilio et al. "Slow Charge Recombination in Dye-Sensitised Solar Cells (DSSC) Using Al <sub>2</sub> O <sub>3</sub> Coated Nanoporous TiO <sub>2</sub> Films." <u>Chemical Communications</u> . 14 (7/21/2002): 1464-1465.

Examiner Initial	Author, Title, Date, Pertinent Pages, etc.
	Ichinose, laumi et al. "Stepwise Adsorption of Metal Alkoxides on Hydrolyzed Surfaces: A Surface Sol-Gel Process." <u>Chemistry Letters</u> . 25.10 (1996): 831-832.
	Ichinose, laumi et al. "A Surface Sol-Gel process of TiO <sub>2</sub> and Other Metal Oxide Films With Molecular Precision." <u>Chemistry of Materials, American Chemical Society</u> . 9.6 (1997): 1296-1298.
	Kay, Andreas et al. "Dye-Sensitized Core - Shell Nanocrystals: Improved Efficiency of Mesoporous Tin Oxide Electrodes Coated with a Thin Layer of an Insulating Oxide." <u>Chemistry of Materials, American Chemical Society</u> . 14.7 (2002): 2930-2935.
	Tennakone, K. et al. "Dye-Sensitized Solid-State Photovoltaic Cells: Suppression of Electron-Hole Recombination by Deposition of the Dye on a Thin Insulating Film in Contact with a Semiconductor." <u>Journal of Electronic Materials</u> . 30.8 (2001): 992-996.
	Palomares, Emilio et al. "Control of Charge Recombination Dynamics in Dye Sensitized Solar Cells by the Use of Conformally Deposited Metal Oxide Blocking Layers." <u>Journal of the American Chemical Society</u> . 125.2 (2003): 475-482.
	Elder, S.H. et al. "The Discovery and Study of Nanocrystalline TiO <sub>2</sub> -(MoO <sub>3</sub> ) Core-Shell Materials." <u>Journal of the American Chemical Society</u> . 122.21 (2000): 5138-5146.
	Tennakone, K. et al. "Dye-Sensitized Solid State Photovoltaic Cell Based on Composite Zinc Oxide/Tin (IV) Oxide Films." <u>J. Phys. D: Appl. Phys.</u> 32 (1999): 374-379.
	Tennakone, K. et al. "Dye-Sensitized Composite Semiconductor Nanostructures." <u>Physica E</u> . 14 (2002): 190-196.

EXAMINER	DATE CONSIDERED
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EXAMINER: Initial if reference considered, whether or not citation is in conformance with MPEP 609; Draw line through citation if not in conformance and not considered. Include copy of this form with next communication to applicant.

### Information Disclosure Statement PTO-1449 (Modified)

The identification of any reference is not intended to be, and should not be understood as being, an admission that such publication, in fact, constitutes "prior art" within the meaning of applicable law since, for example, a given reference may have a later effective date than first seems apparent or the reference may have an effective date which can be antedated. The "prior art" status of any reference is a matter to be resolved during prosecution.

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